

REPLACEMENT SHEET

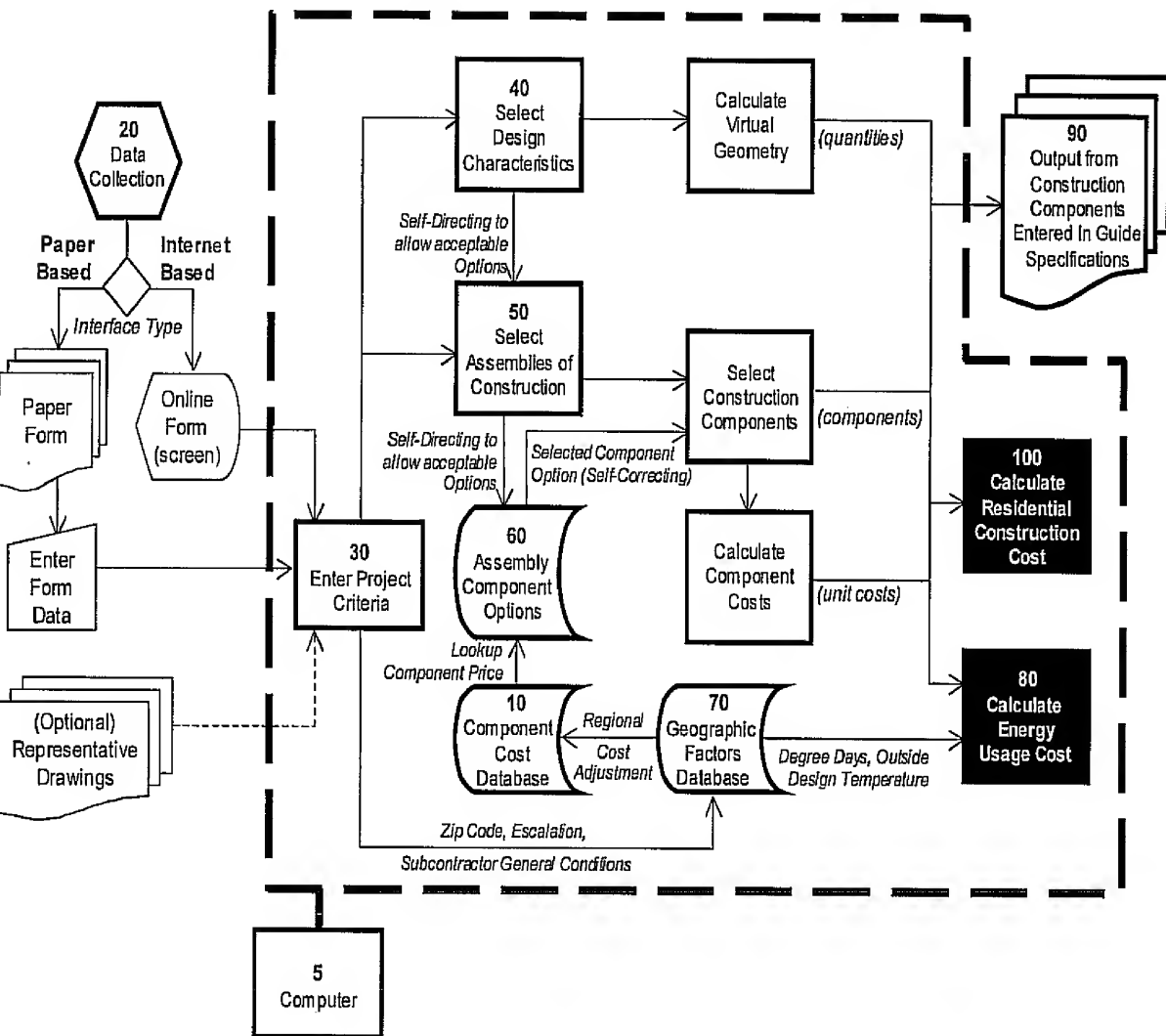


FIGURE 1

REPLACEMENT SHEET

PRICE CATALOG				Location Factor: 0.94	MASTER [BASELINE] RCM		
				Sales Tax: 6.0%	Berrien City, MI		
02 Project Planning & Management, Inc.				Ave Sub Gen'l Conditions: 2%	Cost Adjustments		
System	Description	Base Unit Cost	Adjusted Unit Cost	Unit	Loc_Fctr	S_Tax	Sub_GC
ot_sprf_ftg	3000 PSI concrete						
1	forms, rebar, concr, placing, finish	\$204.00	\$201.35	CY	0.94	3%	2%
sprf_ftg	3000 PSI concrete						
1	Not Req'd (Trench Footing)	\$0.00	\$0.00	LF			
2	12" thick x 18" wide; forms, reinf, direct chute	\$12.06	\$11.90	LF	0.94	3%	2%
3	12" thick x 24" wide; forms, reinf, direct chute	\$13.71	\$13.53	LF	0.94	3%	2%
4	(For Precast Foundations) 12" thick x 24" wide; 3/4" stone bedding	\$2.22	\$2.19	LF	0.94	3%	2%
fdn_drain							
1	PVC 4" dia; gravel drain bed	\$4.00	\$3.95	LF	0.94	3%	2%
2	PVC 6" dia; gravel drain bed	\$5.00	\$4.94	LF	0.94	3%	2%
fdn_wall	4' high foundation wall	(deduct of 4*\$0.70 eliminates 1" rigid insul)					
1	Poured-8"; bitum/damp; sill plates	\$20.44	\$20.17	LF	0.94	3%	2%
2	Poured-10"; bitum/damp; sill plates	\$23.60	\$23.29	LF	0.94	3%	2%
3	Poured-10"; brickledge; bitum/damp; sill plates	\$31.16	\$30.75	LF	0.94	3%	2%
4	Poured-12"; bitum/damp; sill plates	\$26.08	\$25.74	LF	0.94	3%	2%
5	Poured-12"; brickledge; bitum/damp; sill plates	\$33.64	\$33.20	LF	0.94	3%	2%
6	Block-8"; grouted; bitum/damp; parging; sill plates	\$37.84	\$37.35	LF	0.94	3%	2%
7	Block-10"; grouted; bitum/damp; parging; sill plates	\$42.44	\$41.89	LF	0.94	3%	2%
8	Block-12"; grouted; brickledge; parging; bitum/damp; sill plates	\$47.28	\$46.67	LF	0.94	3%	2%
9	Pre-Cast Wall System, bitum/damp; sill plates	\$22.80	\$22.50	LF	0.94	3%	2%
10	ICF (Insulated Concrete Foundation); sill plates	\$32.70	\$32.28	LF	0.94	3%	2%
11	Trench footing/grade beam; 12" poured/reinf; earth formed; no insul	\$21.76	\$21.48	LF	0.94	3%	2%
12	Wood 2x8; 16"OC; CDX sheathing; vapor; 9" insul R-30	\$24.04	\$23.73	LF	0.94	3%	2%

FIGURE 2

REPLACEMENT SHEET

SECTION 7: BUILDING SYSTEMS



This final section will explore and document your quality expectations for various building systems in your new home. These decisions are important as they will directly affect the construction budget. In addition, building envelope selections (walls, roof, windows, insulation) will also impact energy heat loss calculations.

01 Foundation

011 Standard Foundations

- ☐ Sand/Gravel Soil ☐ Sand/Clay Soil ☐ Problem Soils (e.g., water, low soil bearing capacity)

02 Substructure

021 Slab on Grade

- ☐ 4" thick (standard) ☐ 5" thick ☐ 6" thick

022 Excavation: Basement

- ☐ No Basement ☐ Crawlspace
☐ Full Basement ☐ Partial Bsmt (some of Ground Floor living area on slab)

023 Basement Walls

- Wall Material ☐ Poured concrete ☐ Concrete block/parging ☐ Wood foundation
☐ "Superior" Precast Foundation Wall System w/1" Insulation
Waterproofing ☐ Standard Protection ☐ Premium Protection
Insulation ☐ None ☐ 1" Rigid (R-5) ☐ 2" Rigid (R-10) ☐ 3" Rigid (R-15)* (recommended)
*Energy Star

03 Superstructure

031 Floor Construction

NOTE: Priced from least to most expensive per SF of floor system (left to right)

- ☐ 1 Composition "I" Joists (Standard spans to 24')
* 1" x 3" Ceiling furring not required
☐ 2 Dimension lumber (e.g. 2x12) (Standard spans to 19')
* Material readily available
☐ 3 Truss Joists (Standard spans to 24')
* Utilities easily pass through



032 Roof Construction

- House ☐ SIP / Timber Frame ☐ Prefab trusses ☐ Dimensional lumber (e.g. 2x10)
Garage ☐ SIP / Glu Lam Ridge Beam ☐ Prefab trusses ☐ Dimensional lumber (e.g. 2x10)
Dormers ☐ SIP ☐ Dimensional lumber (e.g. 2x8)
SIP Thickness ☐ SIP Not Used ☐ 8.25" OSB/OSB (R-34) ☐ 10.25" OSB/OSB (R-42)
☐ 4.5" OSB/OSB (R-18) ☐ 6.5" OSB/OSB (R-27) ☐ 12.25" OSB/OSB (R-45)
SIP Interior Finish ☐ 1/2" Gypsum Board ☐ Tongue & Groove "T&G" (pine or cedar)

033 Stair Construction

- Basement Stair ☐ Basement stairs, open riser ☐ Pine treads/risers, box stairs, WALLS 2 SIDES/handrail only
☐ Pine treads/risers, box stairs, balusters/handrail, newel post
Ground Floor Stair ☐ Pine treads / risers (pine), box stairs, balusters/handrail, newel post
☐ Hardwood treads / risers, box stairs, WALLS 2 SIDES, balusters/handrail, newel post
☐ Hardwood treads / risers, box stairs, balusters/handrail, newel post
☐ Curved stairway (hardwood), open 1 side ☐ Curved stairway (hardwood), open 2 sides
Auxiliary Stair ☐ None ☐ Attic stair; folding; pine; 8'-6"
☐ Pine treads / risers (pine), box stairs, handrail, newel post ☐ Spiral stairs, oak
☐ Hardwood treads / risers, box stairs, handrail, newel post ☐ Spiral stairs, metal

FIGURE 3

Serial No. 10/721.921
Reply to Office Action of June 7, 2007

REPLACEMENT SHEET

DESCRIPTION	QTY	UNIT	PRICE	TOTAL	TAX	NET
3000000000	1	UNIT	100.00	100.00	0.00	100.00
3000000000	1	UNIT	100.00	100.00	0.00	100.00
3000000000	1	UNIT	100.00	100.00	0.00	100.00

FIGURE 4

002 Project Planning & Management, Inc.		TOTAL FINISHED AREA (TFA): 4,778 SF		Berrien City, MI
		TOTAL CONSTRUCTED AREA: 8,356 SF		4 Bedroom, 5 Bath
Enter:	State	Residential Energy Code	State Mandate	Comments
MI	Michigan	Michigan Uniform Energy Code Part 10 Rules, less stringent than 1992 MEC	Yes	Prior to June 22, 1977, the state of Michigan had no building energy efficiency requirements. On July 27, 1995, the state adopted ANSI/ASHRAE/IES Standard 90A-1990 statewide. SB 719, signed in early January 1996, repeated the 1995 adoption of the 1993 MEC. The legislation directed the state construction code commission to, by April 1, 1997, provide cost-effective standards and establish a program to provide home buyers with energy rating information. The Michigan Uniform Energy Code Part 10 Rules were adopted March 31, 1999.

Envelope Heat Loss	Area (SF)	R-Value	U Factor	Delta T	Heat Loss (BTUH)
Heat Loss-Basement Walls	1,821	6	0.16	22	6,359
Heat Loss-Basement Floor (or Ground Fir Slab)	3,198	25	0.04	22	2,814
Heat Loss-Walkout Wall	1,500	14	0.07	69	7,555
Heat Loss-Walls	448	14	0.07	69	2,206
Heat Loss-Windows (low-E) Default (R-3)	595	3	0.33	69	13,455
Heat Loss-Windows Standard Glazing (R-2)	0	2	0.50	69	-
Heat Loss-Windows (low-E) Triple Glaze (R-6)	0	6	0.17	69	-
Heat Loss-Doorwalls	126	3	0.33	69	2,893
Heat Loss-Doorwalls	0	3	0.33	69	-
Heat Loss-Doors	84	5	0.20	69	1,159
Heat Loss-Roof SIP (on Timber)	1,283	36	0.03	69	2,439
Heat Loss-Roof SIP (on SIP)	0	0	0.00	69	-
Heat Loss-Attic (Uninsulated Roof Rafter)	547	16	0.06	69	2,393
Heat Loss-Skylights	0	3	0.33	69	-
Building Envelope Heat Loss					41,260 BTUH

3	97.5%-99% Design Dry Bulb Temp (deg F)
72	Indoor Design Temp (deg F)
69	Delta T

72,113	Total BTUH Demand
1.4	Furnace Sizing Factor
127,000	Furnace Size at 90%
Meets Energy Star:	
113,000	Furnace Size at 90%
106,000	Furnace Size at 94%
101,000	Furnace Size at 100% (ELECTRIC)

Envelope Tightness	Building Envelope Heat Loss				41,260 BTUH
Select >	4	Energy Star Very Tight	0.25 ACH (Air Changes / Hour)	Design Occupancy:	5

Infiltration / Ventilation	CFM	ACH	Constant	Volume	Delta T	Heat Loss (BTUH)
Natural Infiltration	303	0.25	1.08	72,764	69	22,593
Mechanical Ventilation w/AAUX	424	0.35	1.08	72,764	18	8,251
75% AAUX Efficiency	141.09	Min Target CFM				

Envelope + Infiltration Heat Loss =	72,113 BTUH			Natural Gas	10 therms (10mcft) = 1,000,000 BTU's
Furnace AFUE =	90%	2	<Select Furnace Eff.	Electricity	293 KWH = 1,000,000 BTU's
Furnace Size =	80,126 BTUH			Propane	10.9 Gallons = 1,000,000 BTU's
D = Degree Days =	6,439	Berrien City, MI	(per National Climatic Data Center)	Heating Oil	7.21 Gallons = 1,000,000 BTU's
T = Temp diff =	69 degrees				
V = Fuel value =	1,052 BTUH per	cu ft natural gas			
V = Fuel value =	91,743 BTUH per	Gallon propane			
V = Fuel value =	3,413 BTUH per	KWH electric			
CF1 =	1.36	Correction factor that includes the effects of rated full load efficiency, part load performance, over sizing and energy conservation devices.			
CF2 =	0.71	Empirical correction factor for heating effect versus 65 degrees F degrees-days.			
E = Annual Energy Consumption =	164,715	cu ft natural gas		\$0.58	cost per therm NGAS
	1,689	gallons of propane		\$0.0058	cost per CF of nat gas
	-	KWH of electricity (100% Efficiency)		\$0.95	cost per gallon Propane
				\$0.075	cost per KWH of Electricity (Assumes Average Off Peak and Peak)
Annual Heating Cost =	\$955.35	NGAS			
Annual Heating Cost =	\$1,794.32	PROPANE			
Annual Heating Cost =	\$0.00	ELECTRIC			

FIGURE 5

REPLACEMENT SHEET

SPECIFIC QUALITY / COST SELECTIONS				MASTER (BASELINE) RCM				P21	BASELINE TOTAL	Savings
237 System Selections				Design Category: M						
/002 Project Planning & Management, Inc.				4 Bedroom, 5 Bath						
Selection Switches				TOTAL FINISHED AREA: 4,770 SF		TOTAL CONSTRUCTED AREA: 8,358 SF				
SUBSYSTEM				quan	unit	unit \$	total \$			
011 Standard Foundations										
011.10	Spread footings (timber columns)	1	12" thick 30"x30" forms, rebar, concrete	9	NCCLS	\$46.61	\$419	\$419	\$0	
011.10	Spread footings (ally columns)	1	12" thick 30"x30" forms, rebar, concrete	5	EA	\$46.61	\$233	\$233	\$0	
011.20	Spread footings (foundation walls)	4	12" thick x 24" wide; forms, reinf, direct chole	43	LF	\$13.63	\$582	\$582	\$0	
011.20	Spread footings (basement walls)	5	12" thick x 24" wide; forms, reinf, direct chole, PVC 6" gravel drainbed	352	LF	\$16.47	\$5,806	\$5,806	\$0	
011.30	Foundation Wall (4' high)	1	Poured-8", bitum/damp, sill plates	230	LF	\$20.17	\$4,640	\$4,640	\$0	
011.40	Excavation: Foundation Wall Footing	2	4' depth spread fig excav, sand/gravel; backfill; no compact'n; rough grade	345	SF	\$0.39	\$136	\$136	\$0	
012 Special Foundations		1	No additional special foundations	345	SF	\$0.00	\$0	\$0	\$0	
021 Slab on Grade										
021.00	Ground Floor Slab on Grade	3	Not Used	0	SF	\$0.00	\$0	\$0	\$0	
021.00	Garage Floor Slab on Grade	1	4" slab w/4" gravel base; 6 mil vap; expan matl; W1.4/W1.4; steel trowel finis	864	SF	\$2.69	\$2,328	\$2,328	\$0	
021.00	Basement Slab on Grade	3	4" slab w/4" gravel base; 6 mil vap; expan matl; W1.4/W1.4; steel trowel finis	3,196	SF	\$2.69	\$8,617	\$8,617	\$0	
021.10	Basement Slab Insulation	1	Not Used	0	SF	\$0.00	\$0	\$0	\$0	
022 Excavation: Basement		3	Walkout: Sand & gravel excav; backfill; compaction 8" lifts; rough grade	1,066	CY	\$5.75	\$6,125	\$6,125	\$0	
022.00	Off Site Trucking	1	Assumes off-site hauling NOT required (Assumes on site placement of spoils)	0	CY	\$0.00	\$0	\$0	\$0	
023 Basement Walls		1	Poured-8", bitum/damp; sill plates	1,821	BWA	\$5.30	\$9,643	\$9,643	\$0	
023.00	Partial Height Basement Wall Framing	1	Not Used	0	BWA	\$0.00	\$0	\$0	\$0	
023.10	Basement Wall Insulation	1	None	1,821	BWA	\$0.00	\$0	\$0	\$0	

Baseline Selections

SPECIFIC QUALITY / COST SELECTIONS				MASTER (BASELINE) RCM				P21	BASELINE TOTAL	Savings
237 System Selections				Design Category: M						
/002 Project Planning & Management, Inc.				4 Bedroom, 5 Bath						
SUBSYSTEM				quan	unit	unit \$	total \$			
011 Standard Foundations										
011.10	Spread footings (timber columns)	1	12" thick 30"x30" forms, rebar, concrete	9	NCCLS	\$46.61	\$419	\$419	\$0	\$0
011.10	Spread footings (ally columns)	1	12" thick 30"x30" forms, rebar, concrete	5	EA	\$46.61	\$233	\$233	\$0	\$0
011.20	Spread footings (foundation walls)	4	12" thick x 24" wide; forms, reinf, direct chole	43	LF	\$13.63	\$582	\$582	\$0	\$0
011.20	Spread footings (basement walls)	5	12" thick x 24" wide; forms, reinf, direct chole, PVC 6" gravel drainbed	352	LF	\$16.47	\$5,806	\$5,806	\$0	\$0
011.30	Foundation Wall (4' high)	1	Poured-8", bitum/damp; sill plates	80	LF	\$20.17	\$1,614	\$1,614	(\$3,636)	(\$3,636)
011.40	Excavation: Foundation Wall Footing	2	4' depth spread fig excav, sand/gravel, backfill, no compact'n, rough grade	195	SF	\$0.39	\$77	\$136	(\$59)	(\$59)
012 Special Foundations				1	No additional special foundations		\$0	\$0	\$0	\$0
021 Slab on Grade										
021.00	Ground Floor Slab on Grade	3	Not Used	0	SF	\$0.00	\$0	\$0	\$0	\$0
021.00	Garage Floor Slab on Grade	1	4" slab w/4" gravel base; 6 mil vap; expan matl; W1.4/W1.4; steel trowel finis	864	SF	\$2.69	\$2,328	\$2,328	\$0	\$0
021.00	Basement Slab on Grade	3	4" slab w/4" gravel base; 6 mil vap; expan matl; W1.4/W1.4; steel trowel finis	3,196	SF	\$2.69	\$8,617	\$8,617	\$0	\$0
021.10	Basement Slab Insulation	1	Not Used	0	SF	\$0.00	\$0	\$0	\$0	\$0
022 Excavation: Basement				3	<RESELECT> Must Select '1' or 2-Full Basement Option	1,066	CY	<RESELECT>	#VALUE!	#VALUE!
022.00	Off Site Trucking	1	Assumes off-site hauling NOT required (Assumes on site placement of spoils)	0	CY	\$0.00	\$0	\$0	\$0	\$0
023 Basement Walls				1	Poured-8", bitum/damp; sill plates	3,171	BWA	\$5.30	\$16,792	\$9,643
023.00	Partial Height Basement Wall Framing	1	Not Used	0	BWA	\$0.00	\$0	\$0	\$0	\$0
023.10	Basement Wall Insulation	1	None	3,171	BWA	\$0.00	\$0	\$0	\$0	\$0

Alternate Selections illustrating self documenting line item changes to component costs and Self-Correcting feature (Line 022 Basement Excavation) wherein 'ERROR' was triggered when 'Walkout Basement' was deselected in '40 Design Characteristics, requiring selection of Full Basement excavation options.

FIGURE 6

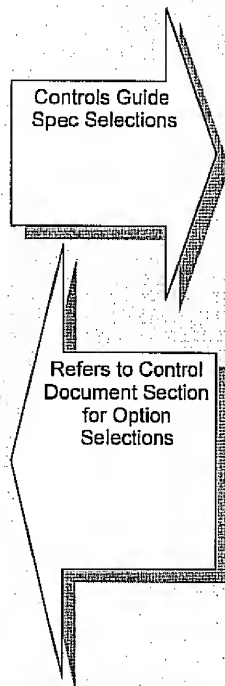
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Residential Cost Estimation Construction Summary "Component Options"

Guide Specifications CSI MASTERFORMAT Divisions 1-16

- **Control Document** that provides outline construction descriptions of the building systems as selected by the Owner.
- **Serves a similar purpose as site and engineering drawings** would provide in that scope and construction requirements are called out for site, structural, mechanical, electrical and plumbing systems.
- **Controls** which material options are to be selected in cases where options exist in the guide spec sections.



- **Detailed Guide Specifications including all 16 CSI Divisions**
 - Division 1 - General Requirements
 - Division 2 - Site Construction
 - Division 3 - Concrete
 - Division 4 - Masonry
 - Division 5 - Metals
 - Division 6 - Wood And Plastics
 - Division 7 - Thermal And Moisture Protection
 - Division 8 - Doors And Windows
 - Division 9 - Finishes
 - Division 10 - Specialties
 - Division 11 - Equipment
 - Division 12 - Furnishings
 - Division 13 - Special Construction
 - Division 14 - Conveying Systems
 - Division 15 - Mechanical
 - Division 16 - Electrical

FIGURE 7